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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Attorney Docket No. A34209  
MBHB Case No. 04-904-A

In re the Application of: )  
)  
Jac-Hong Park et al. )  
) Examiner: Hassan A. Phillips  
Serial No.: 09/832,252 )  
) Group Art Unit 2151  
Filed: April 10, 2001 )  
) Confirmation No. 9470  
For: METHOD FOR RETRANSMITTING )  
DATA EFFICIENTLY IN MOBILE )  
COMMUNICATION SYSTEM )

TRANSMITTAL LETTER

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
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Dear Sir:

In regard to the above identified application,

1. I am transmitting herewith the attached:
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Respectfully submitted,

Date: August 26, 2005

By: Richard A. Machonkin  
Richard A. Machonkin  
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## **Real Party in Interest**

The real party in interest is UTStarcom Korea Limited (C/O of UTStarcom, Inc.), to which this invention is assigned.

## **II. Related Appeals and Interferences**

Applicant is not aware of any related appeals or interferences.

## **III. Status of Claims**

Claims 1-20 stand finally rejected. The rejections of claims 1-20 are being appealed.

## **IV. Status of Amendments**

There are no outstanding amendments. The proposed claim amendments filed on May 23, 2005 have been entered for purposes of appeal.

## **V. Summary of Claimed Subject Matter**

There are four independent claims: claims 1, 13, 16, and 17. These claims recite the invention as a method, or computer-readable record media storing instructions for performing a method, for retransmitting data between two sides including a reception side and a transmission side in a mobile communication system including one or more mobile stations and one or more radio networks.

In particular, claims 1 and 16 recite the invention as a method that includes: (i) at the reception side, storing data received from the transmission side in a first storage unit, (ii) as a result of an error-checking procedure, if the data is erroneous, requesting the transmission side to retransmit the data, (iii) at the transmission side, transmitting to the reception side first information related to retransmission and then retransmitting the requested data, wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side, (iv) at a combining unit at the reception side, combining the

retransmitted data with the data stored in the first storage unit, (v) if the combined data is not erroneous, clearing the data and the retransmitted data from the first storage unit and transmitting the combined data to a first upper layer included in the reception side, and (vi) in response to an ACK signal from the reception side representing that normal data has been received, clearing at the transmission side the retransmitted data from a second storage unit.

Further, in particular, claims 13 and 17 recite the invention as a method that includes: (i) at the reception side, storing data received from the transmission side in a first storage unit, (ii) as a result of an error-checking procedure, if the data is erroneous, requesting the transmission side to retransmit the data, (iii) at the transmission side, transmitting to the reception side information about when the transmission side will retransmit the requested data to the reception side, and then retransmitting to the reception side the requested data and a transport format combination indicator (TFCD), (iv) by a combination unit included in the reception side, combining the retransmitted data with the data stored in the first storage unit, (v) if the combined data are not erroneous, clearing the data and the retransmitted data from the first storage unit and transmitting the combined data to a first upper layer included in the reception side, and (vi) in response to an ACK signal from the reception side representing that normal data has been received, clearing the retransmitted data from a second storage unit at the transmission side.

The specification provides exemplary support for the invention as recited in all of the independent claims. For instance, the specification explains that at the reception side, storing data received from the transmission side in a first storage unit. *See, e.g.,* page 3, lines 12-13, page 7, lines 5-11. Further, the specification explains that as a result of an error-checking procedure, if the data is erroneous, requesting the transmission side to retransmit the data. *See, e.g.,* page 3, lines 13-14, page 7, lines 14-22. Further still, the specification explains that at the

transmission side, transmitting to the reception side first information related to retransmission and then retransmitting the requested data, wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side and a transport format combination indicator (TFCI). *See, e.g.*, page 8, lines 2-5, page 10, lines 7-13.

The specification also explains that a combination unit included in the reception side, combines the retransmitted data with the data stored in the first storage unit. *See, e.g.*, page 3, lines 16-17, page 11, lines 5-8. Further, the specification explains that if the combined data are not erroneous, clearing the data and the retransmitted data from the first storage unit and transmitting the combined data to a first upper layer included in the reception side. *See, e.g.*, page 3, lines 17-19, page 15, lines 1-8. Further still, the specification explains that in response to an ACK signal from the reception side representing that normal data has been received, clearing the retransmitted data from a second storage unit at the transmission side. *See, e.g.*, page 3, lines 19-21, page 15, lines 9-12.

## **VI. Grounds of Rejection to be Reviewed on Appeal**

In response to the Final Office Action mailed March 2, 2005, the Applicant filed an amendment on May 23, 2005. On the Advisory Action mailed June 7, 2005, the Examiner indicated that for purposes of appeal, the proposed amendments, filed on May 23, 2005, will be entered and that claims 1-20 stand rejected. However, the Examiner did not, as required by M.P.E.P. § 714.13, indicate on the Advisory Action which individual rejection(s) set forth in the action from which the appeal was taken (i.e., the Final Office Action) would be used to reject the amended claims. Thus, the claims, as amended, stand rejected as recited in the Final Office Action.

Claims 1-6, 8-9, 11-12, 16, and 18-19 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 5,946,320 (Decker) in view of Applicants Admitted Prior Art (AAPA).

Claims 7 and 10 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Decker, in view of the AAPA, and further in view of U.S. Patent No. 6,646,993 (Davies et al.).

Claims 13-15, 17, and 20 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Decker, in view of Davies et al.

## **VII. Argument**

### **A. The Examiner Erred in Rejecting Claims 1-20**

The rejections of claims 1-20 under 35 U.S.C. § 103(a) are improper, because the Examiner has failed to make a *prima facie* case of obviousness of these claims over the respective combination of references applied against these claims. Even if the references are combined in the manner suggested by the Examiner, each combination of references still fails to show or suggest the claimed combination of elements recited in the claims.

#### **1. The Examiner has not Made a *Prima Facie* Case of Obviousness Because the Combination of Decker and AAPA Does Not Disclose or Suggest All of the Limitations of Claims 1-6, 8-9, 11-12, 16, and 18-19**

In order to establish a *prima facie* case of obviousness over a combination of references, the combination must teach or suggest all of the claim limitations. M.P.E.P. § 2143; *In re Royka*, 490 F.2d 981 (CCPA 1974). In this case, the combination of Decker and AAPA does not disclose or suggest all of the limitations of either of independent claims 1 and 16. Accordingly, the combination of Decker and AAPA also fails to teach all of the limitations of any of dependent claims 2-6, 8-9, 11-12, and 18-19.



Each of claims 1 and 16 were amended to include a limitation of original claim 7, so as to recite, in one way or another, the function of transmitting to the reception side first information related to retransmission and then retransmitting the requested data, wherein the first information includes information about *when* the transmission side will retransmit the requested data to the reception side.

In rejecting claim 7, the Examiner indicated that the combination of Decker and AAPA fails to expressly disclose “The information including when the data will be retransmitted ... .” (Final Office Action, Page 8, 4<sup>th</sup> paragraph). The Applicant agrees with the Examiner that the combination of Decker and AAPA fails to disclose or suggest wherein the first information includes information about *when* the transmission side will retransmit the requested data to the reception side.

Because the combination of Decker and AAPA fails to teach the recited claim function of transmitting to the reception side first information related to retransmission and then retransmitting the requested data, wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side, a *prima facie* case of obviousness of claims 1 and 16 does not exist. Further, because claims 2-6, 8-9, 11-12, and 18-19, depends from either of claims 1 and 16, a *prima facie* case of obviousness of claims 2-6, 8-9, 11-12, and 18-19, also does not exist.

**2. The Examiner has not Made a *Prima Facie* Case of Obviousness Because the Combination of Decker, AAPA, and Davies et al. Does Not Disclose or Suggest All of the Limitations of Claims 7 and 10**

Each of claims 7 and 10 depend from claim 1 and necessarily include all of the limitations of claim 1. As indicated above, claim 1, recites the function of transmitting to the reception side first information related to retransmission and then retransmitting the requested

data, wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side. The combination of Decker, AAPA, and Davies et al., fails to teach this function.

In rejecting claim 7, the Examiner asserted that it was well known in the art, at the time of the present invention, to include information such as: when data will be transmitted and how the data is processed at the transmission side before the data is sent to the reception side. In support, the Examiner cited to Davies et al. for teaching a communication apparatus and method for format adaptation comprising receiving first information that is used to perform appropriate decoding of data, such as how the transmission side established a coding rate and a puncturing. (Davies et al., Col. 2, lines 26-35).

At best, however, this section of Davies et al. merely discloses that (i) information on the transmission format will be embedded in a communication, (ii) control bits (known as TFCI bits) will be included to signal the transmission format to the receiving units, (iii) the received TFCI is used in the receiver to perform the appropriate decoding of data, and (iv) the types of parameter, which may be affected by TFCI include: the spreading factor or modulation, the channel coding, rate matching, interleaving, and service multiplexing. (Davies et al., Col. 2, lines 26-35). Elsewhere, Davies et al. discloses that transmission format information relevant to symbol level processing may comprise a channel coding, an interleaving format, a transmission rate, and a multiplexing of services, and that transmission format information relevant to chip level processing may comprise a spreading factor, a spreading modulation, a spreading code, and a modulation format. (See, e.g., Col. 3, lines 1-21, and Col. 5, line 58 to Col. 6, line 35). However, Davies et al. does not disclose first information that includes information about *when* the transmission side will retransmit the requested data to the reception side.

Claim 7 also recites wherein the first information includes information about a way of processing the requested data at the transmission side before retransmitting the requested data to the reception side, the way including how to establish *a data coding rate and a puncturing*. As noted above, the Examiner indicated that Davies et al. teaches a communication apparatus and method for format adaptation comprising receiving first information that is used to perform appropriate decoding of data, such as how the transmission side established a coding rate and a puncturing. (Davies et al., Col. 2, lines 26-35). With regard to this limitation of claim 7, at best, this section of Davies et al. teaches that (i) control bits (known as TFCI bits) will be included to signal the transmission format to the receiving units, and (ii) the transmitter sets the TFCI bits to indicate the format used to encode the user data, and that parameters, such as: the spreading factor or modulation, the channel coding, rate matching, interleaving, and service multiplexing, may be affected by the TFCI. However, Davies et al. does not teach or suggest wherein the first information includes information about a way of processing the requested data at the transmission side before retransmitting the requested data to the reception side, the way including how to establish *a data coding rate and a puncturing*.

Moreover, Decker and AAPA fail to make up for the deficiencies in Davies et al. In rejecting claim 7, the Examiner indicated that the combination of Decker and AAPA fails to expressly disclose “The information including when the data will be retransmitted and a way of processing the data at the transmission side before retransmitting the data.” (Final Office Action, Page 8, 4<sup>th</sup> paragraph). The Applicant agrees with the Examiner that Decker and AAPA do not disclose or suggest (i) wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side, or (ii) wherein the first information includes information about a way of processing the requested data at the

transmission side before retransmitting the requested data to the reception side, the way including how to establish a data coding rate and a puncturing.

Because the combination of Decker, AAPA, and Davies et al. fails to teach the recited claim function of (i) transmitting to the reception side first information related to retransmission and then retransmitting the requested data, wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side, or (ii) wherein the first information includes information about a way of processing the requested data at the transmission side before retransmitting the requested data to the reception side, the way including how to establish a data coding rate and a puncturing, a *prima facie* case of obviousness of claim 7 does not exist. Further, because claim 10 depends from claim 7, a *prima facie* case of obviousness of claim 10 also does not exist.

**3. The Examiner has not Made a *Prima Facie* Case of Obviousness Because the Combination of Decker and Davies et al. Does Not Disclose or Suggest All of the Limitations of Claims 13-15, 17, and 20**

The combination of Decker and Davies et al. does not disclose or suggest all of the limitations of any of independent claims 13 and 17. Accordingly, the combination of Decker and Davies et al. also fails to teach all of the limitations of any of dependent claims 14-15 and 20.

Each of claims 13 and 17 were amended to include a limitation of original claim 7. Each of independent claims 13 and 17, now recites, the function of at the transmission side, transmitting to the reception side information about *when* the transmission side will retransmit the requested data to the reception side, and then retransmitting to the reception side the requested data and a transport format combination indicator (TFCI). The combination of Decker and Davies et al., fails to teach this function. In particular, the combination of Decker and

Davies et al., fails to disclose or suggest transmitting to the reception side information about *when* the transmission side will retransmit the requested data to the reception side.

As stated above, in rejecting claim 7, the Examiner asserted that it was well known in the art, at the time of the present invention, to include information such as: when data will be transmitted and how the data is processed at the transmission side before the data is sent to the reception side. In support, the Examiner cited to Davies et al. for teaching a communication apparatus and method for format adaptation comprising receiving first information that is used to perform appropriate decoding of data, such as how the transmission side established a coding rate and a puncturing. (Davies et al., Col. 2, lines 26-35).

However, as discussed above, at best, this section of Davies et al. merely discloses that (i) information on the transmission format will be embedded in a communication, (ii) control bits (known as TFCI bits) will be included to signal the transmission format to the receiving units, (iii) the received TFCI is used in the receiver to perform the appropriate decoding of data, and (iv) the types of parameter, which may be affected by TFCI include: the spreading factor or modulation, the channel coding, rate matching, interleaving, and service multiplexing. (Davies et al., Col. 2, lines 26-35).

Further, as discussed above, Davies et al. discloses that transmission format information relevant to symbol level processing may comprise a channel coding, an interleaving format, a transmission rate, and a multiplexing of services, and that transmission format information relevant to chip level processing may comprise a spreading factor, a spreading modulation, a spreading code, and a modulation format. (See, e.g., Col. 3, lines 1-21, and Col. 5, line 58 to Col. 6, line 35). However, Davies et al. does not disclose transmitting to the reception side

information about when the transmission side will retransmit the requested data to the reception side.

Further still, as discussed above, in rejecting claim 7, the Examiner indicated that the combination of Decker and AAPA fails to expressly disclose "The information including when the data will be retransmitted ... ." (Final Office Action, Page 8, 4<sup>th</sup> paragraph). The Applicant agrees with the Examiner that Decker and AAPA does not disclose or suggest wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side.

Because the combination of Decker and Davies et al. fails to teach the recited claim function of at the transmission side, transmitting to the reception side information about when the transmission side will retransmit the requested data to the reception side, and then retransmitting to the reception side the requested data and a transport format combination indicator (TFCI), a *prima facie* case of obviousness of claims 13 and 17 does not exist. Further, because claims 14-15 and 20 depend from claim 13, a *prima facie* case of obviousness of claim 14-15 and 20 also does not exist.

#### **B. Conclusion**

Applicant has demonstrated that the rejections of claims 1-20 are erroneous. Applicant therefore requests reversal of the rejections and allowance of all pending claims in the application.

Respectfully submitted,

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Dated: August 26, 2005

## **APPENDIX A**

### **PENDING CLAIMS**

1. (Previously Presented) A method for retransmitting data between two sides including a reception side and a transmission side in a mobile communication system including one or more mobile stations and one or more radio networks, the method comprising the steps of:
  - a) at the reception side, storing data received from the transmission side in a first storage unit;
  - b) as a result of an error-checking procedure, if the data is erroneous, requesting the transmission side to retransmit the data;
  - c) at the transmission side, transmitting to the reception side first information related to retransmission and then retransmitting the requested data, wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side;
  - d) at a combining unit at the reception side, combining the retransmitted data with the data stored in the first storage unit;
  - e) if the combined data is not erroneous, clearing the data and the retransmitted data from the first storage unit and transmitting the combined data to a first upper layer included in the reception side; and
  - f) in response to an ACK signal from the reception side representing that normal data has been received, clearing at the transmission side the retransmitted data from a second storage unit.

2. (Original) The method as recited in claim 1, wherein the first storage unit is included in a first physical layer included in the reception side.

3. (Original) The method as recited in claim 1, wherein the second storage unit is included in a second upper layer included in the transmission side.

4. (Original) The method as recited in claim 1, wherein the step b) includes the steps of:

b1) performing the error-checking procedure by a cyclic redundancy check unit;

b2) if the data is erroneous, failing to transmit the data stored in the first storage unit to the first upper layer included in the reception side; and

b3) by the first upper layer, requesting the transmission side to retransmit the data by transmitting a NACK signal representing that desired data has not been received.

5. (Original) The method as recited in claim 4, wherein the NACK signal is generated at the first upper layer when the desired data has not been received during a predetermined time.

6. (Original) The method as recited in claim 4, wherein the NACK signal is generated at the first upper layer when other data, expected to be received after the desired data is received at the upper layer before the desired data.



7. (Previously Presented) The method as recited in claim 1, wherein the first information includes information about a way of processing the requested data at the transmission side before retransmitting the requested data to the reception side, the way including how to establish a data coding rate and a puncturing.

8. (Original) The method as recited in claim 1, wherein the transmission side transmits the first information to the reception side before retransmitting the requested data.

9. (Original) The method as recited in claim 1, wherein the first information is transmitted as a first upper layer message.

10. (Original) The method as recited in claim 7, wherein the way of processing the requested data at the transmission side before retransmitting the requested data to the reception side is different from the way of processing the data at the transmission side before transmitting the data to the reception side.

11. (Original) The method as recited in claim 1, wherein the step b) further includes the steps of:

g) if the data is not erroneous, clearing the data from the first storage unit and transmitting the data to the first upper layer; and

h) generating the ACK signal in the first upper layer in response to reception of the data by the first upper layer.

12. (Original) The method as recited in claim 1, wherein the step e) further includes the step of:

if the combined data is erroneous, returning to the step b).

13. (Previously Presented) A method for retransmitting data between two sides including a reception side and a transmission side in a mobile communication system including one or more mobile stations and one or more radio networks, the method comprising the steps of:

a) at the reception side, storing data received from the transmission side in a first storage unit;

b) as a result of an error-checking procedure, if the data is erroneous, requesting the transmission side to retransmit the data;

c) at the transmission side, transmitting to the reception side information about when the transmission side will retransmit the requested data to the reception side, and then retransmitting to the reception side the requested data and a transport format combination indicator (TFCI);

d) by a combination unit included in the reception side, combining the retransmitted data with the data stored in the first storage unit;

e) if the combined data are not erroneous, clearing the data and the retransmitted data from the first storage unit and transmitting the combined data to a first upper layer included in the reception side; and

f) in response to an ACK signal from the reception side representing that normal data has been received, clearing the retransmitted data from a second storage unit at the transmission side.

14. (Previously presented) The method as recited in claim 13, wherein it is determined if the reception side is receiving the retransmitted data by interpreting the transport format combination indicator (TFCI).

15. (Previously presented) The method as recited in claim 14, wherein if it is determined that the reception side is receiving the retransmitted data by interpreting the transport format combination indicator (TFCI), the step d) is performed.

16. (Previously Presented) Computer-readable record media storing instructions for performing a method for retransmitting data between two sides including a reception side and a transmission side in a mobile communication system including one or more mobile stations and one or more radio networks, the method comprising the steps of:

a) at the reception side, storing data received from the transmission side in a first storage unit;

b) as a result of an error-checking procedure, if the data is erroneous, requesting the transmission side to retransmit the data;

c) at the transmission side, transmitting to the reception side a first information related to retransmission and then retransmitting the requested data, wherein the first information includes information about when the transmission side will retransmit the requested data to the reception side;

d) at a combining unit at the reception side, combining the retransmitted data with the data stored in the first storage unit;

e) if the combined data is not erroneous, clearing the data and the retransmitted data from the first storage unit and transmitting the combined data to a first upper layer included in the reception side; and

f) in response to an ACK signal from the reception side representing that normal data has been received, clearing at the transmission side the retransmitted data from a second storage unit.

17. (Previously Presented) Computer-readable record media storing instructions for performing a method for retransmitting data between two sides including a reception side and a transmission side in a mobile communication system including one or more mobile stations and one or more radio networks, the method comprising the steps of:

a) at the reception side, storing data received from the transmission side in a first storage unit;

b) as a result of an error-checking procedure, if the data is erroneous, requesting the transmission side to retransmit the data;

c) at the transmission side, transmitting to the reception side information about when the transmission side will retransmit the requested data to the reception side, and then retransmitting to the reception side the requested data and a transport format combination indicator (TFCI);

d) by a combination unit included in the reception side, combining the retransmitted data with the data stored in the first storage unit;

e) if the combined data are not erroneous, clearing the data and the retransmitted data from the first storage unit and transmitting the combined data to a first upper layer included in the reception side; and

f) in response to an ACK signal from the reception side representing that normal data has been received, clearing the retransmitted data from a second storage unit at the transmission side.

18. (Previously Presented) The method of claim 1, wherein transmitting the combined data to a first upper layer included in the reception side comprises transmitting the combined data to a data reception unit of the first upper layer for transmission, in turn, of the combined data to an asynchronous core network.

19. (Previously Presented) The method of claim 1, wherein transmitting the combined data to a first upper layer included in the reception side comprises transmitting the combined data to a data reception unit of the first upper layer for transmission, in turn, of the combined data to an application part that communicates with the first upper layer.

20. (Previously presented) The method of claim 14, wherein interpreting the TFCI occurs at a physical layer without support from any other layers to interpret the TFCI.